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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,369

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EXAMINER

NGUYEN, KIMNHUNG T

ART UNIT

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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,369	Applicant(s) ICHIKAWA, HIROAKI	
	Examiner KIMNHUNG NGUYEN	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-19 is/are rejected.
- 7) ☒ Claim(s) 12-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application has been examined. The claims 12-19 are pending. The examination results are as following.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei et al. (US 2003/0137485, hereinafter referred to as Wei) in view of Chang et al. (US 6,914,389, hereinafter referred to as Chang) and in view of Aoki (US 2001/0015711).

Regarding claim 16, Wei teaches a liquid crystal display apparatus having a liquid crystal interposed between two substrates ([0024]) and a backlight as a light source for the liquid crystal ([0021]), comprising:

a luminance sensor formed on one of the substrates (this substrate is referred to as the first substrate), the luminance sensor and thin film devices as pixels being formed on the first substrate in the same process ([0025]); wherein the second substrate (64) opposite to the first substrate on which the thin film device is formed is disposed on the backlight side when viewed from the liquid crystal (see fig. 4, see [0024]), and an input signal generation portion that generates an input signal having a repetitive period that is shorter than a period for which the

liquid crystal transmits light without recognition of flickering, the input signal generation portion supplying the input signal to the thin film device (see [0022,0023])

However, Wei fails to explicitly teach a light module for LCDs that includes a control circuit that generates a drive signal that keeps the luminance of the backlight almost constant on the basis of a detection signal detected by the luminance sensor, and that the luminance sensor detects the luminance of the backlight, and a sample hold portion that holds a detection signal of the luminance sensor; and a control circuit that generates a drive signal to maintain the luminance of the backlight almost constant based on a signal held by the sample hold portion.

Chang, however, teaches a light module for LCDs that includes a control circuit that generates a drive signal that keeps the luminance of the backlight almost constant on the basis of a detection signal detected by the luminance sensor (Col. 2, lines 15-28), and that the luminance sensor detects the luminance of the backlight (Col. 2, lines 15-17). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Wei and Chang for the benefit of achieving uniform illumination of the back light (Chang, Col. 2, lines 27-28).

Wei and Chang fail to explicitly teach a sample hold portion. Aoki teaches in fig. 1, an image display comprising a sample hold circuit (310) to hold an input image signal processing circuit (see [0083])

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a sample hold circuit as taught by Aoki into the system of Wei and Chang having the luminance of the backlight almost constant on the basis of a detection signal detected by the luminance sensor for producing the claimed invention because this would hold an image processing in efforts to overcome the irregular luminance (see [0082]).

Regarding claim 14, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 11, wherein the substrate on which the thin film devices are formed when viewed from the liquid crystal side is disposed on the backlight side (Wei [0024], second substrate 64), at least one luminance sensor being disposed in a screen on which the pixels are formed (Chang Fig. 9, items 54A and 54B),

a light shield portion being disposed on the other substrate (this substrate is referred to as the second substrate) so that the light shield portion is opposite to the luminance sensor ([0024], final sentence).

Regarding claim 15, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 11, wherein at least one luminance sensor being disposed outside a screen on which the pixels of the thin film devices are formed (Wei Fig 5, item 34), and wherein the liquid crystal display apparatus further comprises: a housing that houses the first substrate, the second substrate, the backlight, and the control circuit and that covers the luminance sensor (Chang Fig. 1, item 14).

Regarding claim 17, Wei disclose that the liquid crystal display is formed on the first substrate, however, Wei and Chang do not teach, wherein the sample hold portion is formed on the first substrate on which the thin film devices is formed. Aoki discloses in fig. 1, wherein the sample hold portion (see sample circuit 310) should be formed on substrate on which the thin film devices is formed (see [0083]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a sample hold circuit as taught by Aoki into the system of Wei and

Chang having the substrate for producing the claimed invention because this would hold an image processing in efforts to overcome the irregular luminance (see [0082]).

Regarding claim 19 is rejected as the same as claim 16.

4. Claims 12, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei in view of Chang and Aoki (US 2001/0015711) and further in view of Paolini et al. (US 6,791,636, hereinafter referred to as Paolini).

Regarding claim 12, Wei, Chang and Aoki teach the liquid crystal display apparatus as set forth in claim 16. However, the combined teaching fails to teach the claim limitations of present claim 12.

However, Paolini teaches an LCD backlight, wherein the backlight includes a light emitting device array (Col. 1, lines 27-29) and a diffusion portion (Col. 1, lines 47-50), the light emitting device array being an arrangement of repetition of at least three color light emitting devices, the diffusing portion that diffuses color rays emitted from the light emitting device array and generates white light (Col. 1, lines 27-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the backlight includes a light emitting device array and a diffusion portion, the light emitting device array being an arrangement of repetition of at least three color light emitting devices, the diffusing portion that diffuses color rays emitted from the light emitting device array and generates white light as taught by Paolini into the system of Wei, Chang and Aoki for producing the claimed invention because this would provide the benefit of delivering high quality white light to the SLM.

Regarding claim 13, Wei as amended by Chang and Aoki teaches he liquid crystal display apparatus as set forth in claim 1, but fails to teach the limitations of claim 3.

Paolini, however, teaches the use of a backlight system wherein the backlight includes a light emitting device array (Col. 1, lines 27-29), a diffusion portion (Col. 1, lines 47-50), and a light guide portion, the light emitting device array that is an arrangement of repetition of at least three color light emitting devices in a line shape (Col. 1, lines 27-29 and claim 1, see “at least one”), the diffusion portion that diffuses color rays emitted from the light emitting device array and generates white light (Col. 1, lines 47-50), the light guide portion that equally guides the color rays emitted from the light emitting device array to the entire surface of the diffusion portion (Fig 4, items 48, 49 and Col. 6, lines 27-30).

Regarding claim 18, Wei as amended by Chang teaches the liquid crystal display apparatus as set forth in claim 11, but fails to teach the limitations of claim 18.

However, Paolini teaches color filters corresponding to at least three color light emitting devices are disposed on one of the two substrates (Col. 3, lines 18-34), wherein the luminance sensors are disposed corresponding to the light emitting devices and detect the luminance of each of the colors (Col. 5, lines 19-26 and 32-38), and wherein the control circuit generates drive signals for the light emitting devices corresponding to the luminance of each of the colors (Col. 5, lines 23-26).

Response to Arguments

5. Applicant's arguments with respect to claims 12-19 filed on 2/23/09 have been considered but are moot in view of the new ground(s) of rejection.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMNHUNG NGUYEN whose telephone number is (571)272-7698. The examiner can normally be reached on MON-FRI, FROM 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kimnhung Nguyen/
Examiner, Art Unit 2629